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Richard C. Wahlstrom
South Dakota State University

G. W. Libal

South Dakota State University
Brookings, South Dakota

Department of Animal Science
Agricultural Experiment Station

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Antibiotics have been used widely in swine rations at low levels to increase rate of gain and improve feed efficiency for the past two decades. The future of antibiotics as feed additives for swine is uncertain following the recent report of the Food and Drug Administration Task Force that recommended antimicrobial agents used in human clinical medicine be prohibited from growth promotion use in animals by December 31, 1973.

Flavomycin is a new antibiotic that is intended for use only in animal nutrition. It is nonabsorbable and therefore does not leave residues in meat. It also has been reported to be effective at levels much lower than those generally used in swine feeding. The objective of this experiment was to study the efficacy of flavomycin in diets for growing-finishing swine when fed at approximately 10% of the levels used for other antibiotics.

Experimental Procedure

Seventy-two crossbred pigs were allotted to three replicates of four treatments on the basis of litter, sex and weight. Each lot of 6 pigs averaged approximately 41 lb. initially and was removed from the experiment at an average lot weight of approximately 200 pounds. Pigs were housed in concrete floored pens bedded with straw and had access to an outside concrete area where self-feeders were located.

The experimental treatments were as follows:

1. No antibiotic
2. Flavomycin 1 mg./kg. (0.9 grams/ton)
3. Flavomycin 2 mg./kg. (1.8 grams/ton)
4. Chlortetracycline 22 mg./kg. (20 grams/ton)

The composition of the basal diet is shown in table 1. The diet was calculated to contain 16% protein until the pigs weighed 125 lb. and 13% protein from 125 to 200 pounds.

Results

Performance data for this experiment are shown in table 2. Growth performance was very good in all treatments during the growing phase from 41 to 125 pounds. All treatments gained about 1.8 lb. per day. Feed efficiency differed significantly ($P < .05$) between treatments during this growing phase. Requiring the least feed/gain (2.47) were pigs fed 1 mg./kg. of flavomycin and the most feed/gain (2.69) was required by pigs fed chlortetracycline. Barrows gained significantly ($P < .025$) faster than gilts up to 125 lb. weights.

Pigs fed 2 mg./kg. of flavomycin or chlortetracycline gained about 0.1 lb. per day faster than the control or pigs fed 1 mg./kg. of flavomycin during the finishing phase. These increases in gains were associated with increased feed consumption as feed efficiency was similar between treatments. The results are somewhat contradictory to earlier reports which indicated the greatest response to antibiotics was during the early growing period. The reason for this difference in response is not clear.

There were no significant differences in daily gains, feed consumption or feed efficiency for the overall experiment. Pigs fed 1 mg./kg. flavomycin, 2 mg./kg. flavomycin or chlortetracycline gained approximately 1, 3 and 5% faster, respectively, than pigs fed the control (no antibiotic) diet.

Summary

Seventy-two weanling pigs were used in an experiment to study the effect of feeding 1 or 2 mg./kg. of flavomycin and 22 mg./kg. of chlortetracycline. All groups of pigs had quite satisfactory growth performance. There was a significant difference in feed efficiency between treatments during the growing phase. Pigs fed the higher level of flavomycin or chlortetracycline grew slightly faster during the finishing period.

Table 1. Composition of Basal Diet (Percent)

	To 125 lb.	125 to 200 lb.
Ground yellow corn	76.2	85.2
Soybean meal (44%)	21.0	12.4
Dicalcium phosphate	1.7	1.3
Ground limestone	0.5	0.5
Trace mineral salt (0.8% zinc)	0.5	0.5
Vitamin premix[a]	0.1	0.1

[a] Provided 1500 I.U. vitamin A, 200 I.U. vitamin D, 125 mg. riboflavin, 5 mg. calcium pantothenate, 10 mg. niacin, 50 mg. choline and 7.5 mcg. vitamin B_{12} per lb. of diet.

Table 2. Performance of Growing-Finishing Pigs Fed Flavomycin or Chlortetracylcine

	Control	Flavomycin 1 mg./kg.	Flavomycin 2 mg./kg.	Chlortetracylcine 22 mg./kg.
No. of pigs[a]	18	18	18	17[b]
Growing phase				
Avg. daily gain, lb.	1.78	1.80	1.82	1.79
Avg. daily feed, lb.	4.64	4.49	4.58	4.91
Feed/gain*	2.58	2.47	2.55	2.69
Finishing phase				
Avg. daily gain, lb.	1.75	1.76	1.89	1.85
Avg. daily feed, lb.	7.17	7.08	7.65	7.75
Feed/gain	4.05	3.96	4.05	4.08
Growing and finishing				
Avg. daily gain, lb.	1.76	1.78	1.85	1.82
Avg. daily feed, lb.	5.78	5.70	5.98	6.17
Feed/gain	3.23	3.15	3.24	3.32

[a] Avg. initial wt., 41 lb.; avg. final wt., 198 lb.
[b] One pig died during finishing phase, data included for growing phase only.
* P <.05.